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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/500,380	02/08/2000	Kenneth E. Knapp	RR-1645	2519
24501	7590	01/12/2004	EXAMINER	
MARK A LAUER 6601 KOLL CENTER PARKWAY SUITE 245 PLEASANTON, CA 94566			RENNER, CRAIG A	
			ART UNIT	PAPER NUMBER
			2652	
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23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/500,380

Applicant(s)

KNAPP ET AL.

Examiner

Craig A. Renner

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,12,82-101 and 121-134 is/are pending in the application.
- 4a) Of the above claim(s) 128-134 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,12,82,84-92,94-101,121 and 123-127 is/are rejected.
- 7) ☒ Claim(s) 83,93,94 and 122 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 December 2003 has been entered.

Election/Restrictions

2. Claims 128-134 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 17, filed 6 May 2003.

Drawings

3. The drawings were received on 20 October 2003. These drawings are accepted.

Claim Objections

4. Claim 94 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

Art Unit: 2652

required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation(s) found in claim 94 are previously set forth in independent claim 12.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 12, 82, 84-92, 94-101, 121 and 123-127 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki (US 6,583,954).

With respect to claims 1, 82 and 84-91, Sasaki (US 6,583,954) teaches a transducer (FIGS. 7(A-B), for instance) comprising a plurality of solid layers (includes 9 and 16), including a magnetically soft loop (includes 9 and 16) substantially encircling an electrically conductive coil section (includes 12 and 14) and terminating in leading and trailing magnetically soft layers (9 and 16, respectively) separated by an amagnetic gap layer (10), the trailing magnetically soft layer being oriented substantially perpendicular to the amagnetic layer (as shown in FIG. 7B, for instance), wherein the trailing magnetically soft layer has a width measured in a direction substantially parallel

Art Unit: 2652

to the amagnetic layer, the width being less than about two hundred nanometers and greater than about twenty angstroms (line 49 in column 16, and as shown in FIG. 24, for instance, in as broad as the terminology "about" may be construed, i.e., the width of the trailing magnetically soft layer is less than slightly greater than two hundred nanometers) [as per claim 1]; wherein a distance between the magnetically soft layers is not substantially greater than the width (i.e., the distance between the magnetically soft layers is not greater than the width, as shown in FIG. 7B, for instance) [as per claim 82]; wherein the trailing magnetically soft layer contains a refractory metal (lines 13-17 in column 10, for instance) [as per claim 84]; wherein the trailing magnetically soft layer contains material having a B_s higher than that of Permalloy (lines 13-17 in column 10, for instance) [as per claim 85]; wherein the leading magnetically soft layer is substantially perpendicular to the trailing magnetically soft layer (as shown in FIG. 7B, for instance) [as per claim 86]; wherein the trailing magnetically soft layer contains material (as shown in FIG. 7B, for instance) [as per claim 87]; wherein the transducer further comprises a magnetoresistive sensor layer (5) disposed adjacent the leading magnetically soft layer and oriented substantially perpendicular to the trailing magnetically soft layer (as shown in FIG. 7B, for instance) [as per claim 88]; wherein the magnetically soft loop includes a magnetically soft trailing yoke layer (29) that adjoins the trailing magnetically soft layer (as shown in FIG. 12A, for instance) [as per claim 89]; and wherein the trailing yoke layer extends further in the direction substantially parallel to the amagnetic layer than in a direction substantially perpendicular to the amagnetic

Art Unit: 2652

layer and aligned with the leading and trailing magnetically soft layers (as shown in FIGS. 12A and 26, for instance) [as per claim 90].

With respect to claims 12, 91-92 and 94-101, Sasaki (US 6,583,954) teaches a transducer (FIGS. 7(A-B), for instance) comprising a plurality of solid layers (includes 5, 9 and 16), including a magnetoresistive sensor layer (5) and a magnetically soft loop (includes 9 and 16) substantially encircling an electrically conductive coil section (includes 12 and 14) and terminating adjacent a media-facing surface in leading and trailing magnetically soft layers (9 and 16, respectively) separated by an amagnetic gap layer (10), the trailing magnetically soft layer being oriented substantially perpendicular to the magnetoresistive sensor layer (as shown in FIG. 7B, for instance) and having a width measured in a direction substantially parallel to the magnetoresistive sensor layer, the width being less than about two hundred nanometers and greater than about twenty angstroms (line 49 in column 16, and as shown in FIG. 24, for instance, in as broad as the terminology "about" may be construed, i.e., the width of the trailing magnetically soft layer is less than slightly greater than two hundred nanometers) [as per claims 12 and 98-99]; wherein the trailing magnetically soft layer is substantially perpendicular to the amagnetic layer (as shown in FIG. 7B, for instance) [as per claim 91]; wherein the trailing magnetically soft layer is substantially perpendicular to the leading magnetically soft layer (as shown in FIG. 7B, for instance) [as per claim 92]; wherein the width of the trailing magnetically soft layer is less than about two hundred nanometers (line 49 in column 16, and as shown in FIG. 24, for instance, in as broad as the terminology "about" may be construed, i.e., the width of the trailing magnetically soft layer is less

Art Unit: 2652

than slightly greater than two hundred nanometers) [as per claim 94]; wherein the width of the trailing magnetically soft layer is not substantially greater than a thickness of the amagnetic layer (i.e., the width of the trailing magnetically soft layer is relatively not significantly greater than a thickness of the amagnetic layer, as shown in FIG. 7B, for instance) [as per claim 95]; wherein the trailing magnetically soft layer contains material having a B_s higher than that of Permalloy (lines 13-17 in column 10, for instance) [as per claim 96]; wherein the trailing magnetically soft layer contains a refractory metal (lines 13-17 in column 10, for instance) [as per claim 97]; wherein the magnetically soft loop includes a magnetically soft trailing yoke layer (29) that adjoins the trailing magnetically soft layer (as shown in FIG. 12A, for instance) [as per claim 100]; and wherein the trailing yoke layer extends further in the direction substantially parallel to the magnetoresistive sensor layer than in a direction substantially perpendicular to the magnetoresistive sensor layer and aligned with the leading and trailing magnetically soft layers (as shown in FIGS. 12A and 26, for instance) [as per claim 101].

With respect to claims 121 and 123-127, Sasaki (US 6,583,954) teaches a transducer (FIGS. 7(A-B), for instance) comprising a magnetoresistive sensor layer (5), a magnetically soft loop (includes 9 and 16) disposed adjacent to the magnetoresistive sensor layer, traversed by an electrically conductive coil section (includes 12 and 14) and including magnetically soft leading and trailing pole-tips (9 and 16, respectively) disposed adjacent to a media-facing surface, the trailing pole-tip aligned with the magnetoresistive sensor layer along a longitudinal direction (as shown in FIG. 7B, for instance) and having a width measured in a track-width direction that is perpendicular to

Art Unit: 2652

the longitudinal direction, the longitudinal and track-width directions being substantially parallel to the media-facing surface, the width being less than two hundred nanometers and greater than twenty angstroms (line 49 in column 16, and as shown in FIG. 24, for instance, in as broad as the terminology "about" may be construed, i.e., the width of the trailing magnetically soft layer is less than slightly greater than two hundred nanometers) [as per claim 121]; wherein the leading and trailing pole-tips are separated by a submicron nonferromagnetic gap layer (10, lines 17-19 in column 10, for instance) [as per claim 123]; wherein the trailing pole-tip consists essentially of material (as shown in FIG. 7B, for instance) [as per claim 124]; wherein the trailing pole-tip contains material having a B_s higher than that of Permalloy (lines 13-17 in column 10, for instance) [as per claim 125]; wherein the magnetically soft loop includes a magnetically soft yoke layer (29) adjoining the trailing pole-tip (as shown in FIG. 12A, for instance) [as per claim 126]; and wherein the yoke layer extends further in the track-width direction than in the longitudinal direction (as shown in FIGS. 12A and 26, for instance) [as per claim 127].

As the claims are directed to a transducer, per se, the method limitations appearing in line 2 in each of claims 87, 98-99 and 124 can only be accorded weight to the extent that they affect the structure of the completed transducer. Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "vacuum-deposited", "sputter-deposited", and "sputtered", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior

Art Unit: 2652

product was made by a different process.” *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “vacuum-deposited”, “sputter-deposited”, and “sputtered”, for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations.” *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

Allowable Subject Matter

7. Claims 83, 93 and 122 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 20 October 2003 have been fully considered but they are not persuasive.

With respect to the rejection utilizing Sasaki (US 6,583,954), the applicant argues that “a Declaration of Kenneth E. Knapp under 37 C.F.R. § 1.131... obviates this rejection.” This argument, however, is not found to be persuasive for the following: The declaration does not specify that the invention as now claimed in amended independent claim 1 was conceived at least as early as May 29, 1999. As the amendment and declaration were submitted simultaneously, it is unclear as to whether the declaration references independent claim 1 before or after the amendment was

Art Unit: 2652

made. Furthermore, the evidence submitted only details "SUB-0.5 um NARROW TRACK" and not the specific ranges set forth in amended independent claim 1.


Therefore, the evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Sasaki (US 6,583,954) reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Craig A. Renner
Primary Examiner
Art Unit 2652

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